

QUASI-PARALLEL MULTICHANNEL RECEIVERS FOR WIDEBAND
ORTHOGONAL FREQUENCY DIVISION MULTIPLEXED
COMMUNICATIONS AND ASSOCIATED METHODS

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Abstract of the Disclosure

A quasi-parallel receiver may simultaneously receive signals within
several subchannels that comprise a wideband channel. The receiver includes a
subchannel filter selection switch that provides a baseband signal to a selected
10 one of a plurality of subchannel low-pass filters. A heterodyne frequency
generator provides one of a plurality of heterodyne frequencies to convert an RF
signal received within a selected subchannel to the baseband signal. The
subchannel low-pass filters accumulate signal information from an associated
one of a plurality of subchannels during a filter-input sampling interval. In some
15 embodiments, individual analog-to-digital converters receive the accumulated
signal outputs from an associated subchannel filter and generate digital signals
for a subsequent Fourier transformation. In some embodiments, a normalized
signal output may be provided to the analog-to-digital converters, allowing the
use of lower resolution analog-to-digital converters. The analog-to-digital
20 converters may have sampling rates based on the subchannel bandwidth.

"Express Mail" mailing label number: EV 332569278 US

Date of Deposit: December 29, 2003

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Application, P.O. Box 1450, Alexandria, VA 22313-1450.